

MEMORANDUM

FILE: Swedish studies of Yellow Rain *mw*
DATE: 10 November, 1985

On October 24-26 I attended a SIPRI meeting on "The Chemical Industry and the Projected Chemical Weapons Convention" at the Swedish Royal Academy of Sciences in Stockholm. A senior scientist attached to the ABC Research Department (FOA 4) of the Swedish National Defense Research Institute in Umea described to me the studies of yellow rain done there.

1) "More than 12 and less than 50" environmental samples from sites of alleged attack in Southeast Asia have been analyzed for trichothecenes at FOA 4. Some blood samples from alleged victims have also been analyzed.

2) Preparations for the analyses began in September, 1981. Analysis of actual samples from SEA began within a year after that.

3) Upon receipt, environmental samples were kept at minus 20 C over P₂O₅. Analyses were done in three steps. In order of increasing discrimination against false positives, these were: GC, GC/medium resolution MS and, finally, GC/high resolution MS. If any step gave positive indications, analysis was done by the step of next higher discrimination. GC/HRMS did disqualify some samples for which GC/MRMS gave positive results. The molecular species responsible for these false positives were not identified.

4) None of the environmental and blood samples were found to contain T-2 or any other trichothecene claimed to be in yellow rain. The sensitivity of analysis was 1-10 ppm for environmental samples and a few ppb for blood. There is high confidence in the results, based on the results of numerous calibration controls.

5) Samples were found to contain phthalates, attributed to exposure to plastic bags. Certain samples from Kampuchea contained CS₂, the siliconized form of riot control agent CS.